



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,524	10/01/2003	Rajesh Balchandran	BOC9-2003-0014 (412)	8314

7590 10/22/2007
Gregory A. Nelson, Akerman Senterfitt
Fourth Floor
222 Lakeview Avenue
P.O. Box 3188
West Palm Beach, FL 33402-3188

EXAMINER

LENNOX, NATALIE

ART UNIT	PAPER NUMBER
----------	--------------

2626

MAIL DATE	DELIVERY MODE
-----------	---------------

10/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/676,524

Applicant(s)

BALCHANDRAN ET AL.

Examiner

Natalie Lennox

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 is/are allowed.
- 6) ☒ Claim(s) 1-9 and 15-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This Office Action has been issued in response to the amendments filed on July 27, 2007. Claims 1-21 are pending with claims 1, 2, 4, 8, 15, 16, and 18 amended, and claims 11-14 cancelled.

Response to Arguments

1. Applicant's arguments with respect to claims 1, 4, 8, 15, and 18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 4-7 and 18-21 are rejected under 35 U.S.C. 102(e) as being anticipated by Shaket (US 2003/0061029).

As per claims 4 and 18, Shaket teaches in a natural language, mixed-initiative system, a method of processing user dialogue, and machine readable storage, comprising the steps of:

receiving at a main menu detector a first user input specifying an action (step 305 from Fig. 3 and Paragraphs [0111] and [0112]);

routing said first user input to an action interpreter configured to determine an action from received user input and to provide the action to an action router (step 306 from Fig. 3 and Paragraph [0112]);

receiving a second user input (step 307 and Paragraph [0114]);

determining whether the second user input specifies an action or a token corresponding to an action (Paragraphs [0114] and [0115], wherein the input is determined to be an action given that the system performs the action and then returns to the previous action at hand (Fig. 3, steps 307-311)); and

providing the second user input to the processor configured to determine an action or to a processor configured to determine a token from received user input according to said determining step (Paragraphs [0070]-[0072], wherein the task manager routes the action or token to the according processor, also paragraphs [0121] and [0123] describe more specifically the actions taken by the system according to the user input in accordance with Fig. 3. The determining step is also aided by the interpretation manager 211 as described in paragraphs [0099]-[0104], more specifically from [0103] to [0104]).

As per claims 5 and 19, Shaket teaches the method of claim 4 and the machine readable storage from claim 18, further comprising the step of performing the action specified by the first user input (In Shaket's example according to Fig. 3, the action specified by the first user input is cancelled at step 316, however it does not mean that

Shaket does not teach performing the user specified actions. Steps 307-309 from Fig. 3 demonstrate an action being performed or completed.).

As per claims 6 and 20, Shaket teach the method of claim 4 and the machine readable storage from claim 18, further comprising the step of determining that the second user input specifies a second action to be performed (user input 307 from Fig. 3, wherein the action is performed by the system's response at steps 308 and 309, also paragraphs [0114] and [0115]).

As per claims 7 and 21, Shaket teach the method of claim 4 and the machine readable storage of claim 18, further comprising the steps of, after said step of providing the first user input to a processor, determining that a token is required to perform the action specified by the first user input and querying the user for the token (steps 305 and 306 from Fig. 3, and paragraphs [0110]-[0113]).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, 8-9, and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shaket (US 2003/0061029) in view of Chapados et al. (US Patent 6,356,869).

As per claims 1 and 15, Shaket teaches, in a natural language, mixed-initiative system, a method of processing user dialogue, and a machine readable storage, respectively, comprising the steps of:

receiving user inputs at a main menu detector, the main menu detector determining whether the user input specifies an action to be performed or a token of information for an action (Paragraphs [0069]-[0072] and Fig. 2, wherein the Task Manager (201) is the main menu detector, the Goals (202) are the actions, and the Plans (204) are the tokens);

for a user input determined by the main menu detector to be an action, routing the user input to an action interpreter (Paragraphs [0080]-[0081] and [0086]-[0088])

for a user input determined to be a token, routing the user input to an action router that routes the user input to a token interpreter that is determined by the action router to be suited for interpreting the user input (Paragraphs [0089]-[0090], wherein the action router is the Plans Module (205), also Paragraph [0073], wherein the Plan Interpreter (225) is the token interpreter).

However, Shaket does not specifically mention routing the user input to one of a plurality of token interpreters.

Conversely, Chapados et al. teach routing the user input to one of a plurality of token interpreters (Temporary transitions 516, 518, and 520 from col. 10, lines 16-38,

Art Unit: 2626

are created or enabled specifically for the purposes of understanding the current dialog turn (Col. 10, lines 55-57)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of routing the user input to one of a plurality of token interpreters as taught by Chapados et al. for Shaket's method because Chapados provides a method for automatically performing desired actions in response to spoken requests, wherein a natural dialogue speech application system uses a discourse management unit to partially or fully automate reservation applications, telephone directory assistance functions, allocation applications, among others (Col. 1, lines 5-14).

As per claims 2 and 16, Shaket, in view of Chapados et al. teach the method of claim 1, and the machine readable storage of claim 15. Shaket does not, but Chapados teaches further comprising:

classifying a token determined from the user input if the user input is determined to be a token (Chapados' Col. 7, lines 65-67, "Conversation analyzer 404 is modeled using a finite-state machine (FSM) that is made up of a set of states, connected together by transitions." Col. 9, lines 7-10, "Transition rules are usually activated upon encountering specific pieces of information in the logical form information data elements extracted from the user's utterance." "Temporary transition" is defined as a transition in a finite state machine that is dependent of the context of a conversation (Col. 3, lines 25-27). Examiner interprets context-dependent data as "tokens." In other words, when

Art Unit: 2626

encountering specific pieces of information from context dependent data or tokens a temporary transition rule is activated.); and

routing the token to one of a plurality of token interpreters according to said classifying step (Chapados' Temporary transitions 516, 518, and 520 from Col. 10, lines 16-38, are created or enabled specifically for the purpose of understanding the current dialog turn (Col. 10, lines 55-57)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of classifying a token determined from the user input if the user input is determined to be a token and routing the token to one of a plurality of token interpreters according to said classifying step as taught by Chapados et al. for Shaket's method because Chapados provides a method for automatically performing desired actions in response to spoken requests, wherein a natural dialogue speech application system uses a discourse management unit to partially or fully automate reservation applications, telephone directory assistance functions, allocation applications, among others (Col. 1, lines 5-14).

As per claims 3 and 17, Shaket, in view of Chapados et al., teach the method of claim 2, and the machine readable storage of claim 16. Shaket does not, but Chapados teach wherein the classifying step identifies the token according to an action identified by the system, an action corresponding to a current state of a system, a category of the user input, a particular domain, or sub-domain (Chapados's Col. 8, lines 49-60, "The CD (context dependent) state transition rules define new transitions in the finite state

machine (FSM) that are temporarily added for the purpose of interpreting a specific user response. An advantage of these CD state transition rules is that the behavior followed when a transition is taken can depend on the context of the dialogue. Context-dependent state transition rules may be applied in many aspects of the conversation analyzer. In a specific example, context-dependent state transition rules are used to provide the discourse manager with "implicit confirmation" ability in a room reservation system," wherein the implicit confirmation is interpreted as an action corresponding to a current state of a system)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of classifying a token determined from the user input if the user input is determined to be a token and routing the token to one of a plurality of token interpreters according to said classifying step as taught by Chapados et al. for Shaket's method because Chapados provides a method for automatically performing desired actions in response to spoken requests, wherein a natural dialogue speech application system uses a discourse management unit to partially or fully automate reservation applications, telephone directory assistance functions, allocation applications, among others (Col. 1, lines 5-14).

As per claim 8, Shaket teaches a natural language, mixed-initiative system comprising:

a main menu detector for receiving a user input, said main menu detector configured to distinguish a user input specifying a requested action from a user input

Art Unit: 2626

specifying a token for performing an action, wherein if the user input specifies a requested action, said main menu detector routes the user input to an action interpreter, and wherein if the user input specifies a token, said main menu detector routes the user input to an action router (Paragraphs [0069]-[0072] and Fig. 2, wherein the Task Manager (201) is the main menu detector, the Goals (202) are the actions, and the Plans (204) are the tokens. Paragraphs [0080]-[0081] and [0086]-[0088] describe the Goals Module and paragraphs [0089]-[0090] describe the Plans Module, wherein the action router is the Plans Module (205), also Paragraph [0073], wherein the Plan Interpreter (225) is the token interpreter);

an action interpreter configured to determine an action from the user input (Paragraphs [0085]-[0088]);

an action router to configured to rout the user input to a token interpreter determined by the action router to be suited for interpreting the user input if the user input specifies a token (Paragraphs [0089]-[0090], wherein the action router is the Plans Module (205), also Paragraph [0073], wherein the Plan Interpreter (225) is the token interpreter); and

at least one token interpreter configured to determine a token from a user input to be used in performing an action (Plan Interpreter (225) from Fig. 2 and Paragraph [0073]).

However, Shaket does not specifically mention routing the user input to one of a plurality of token interpreters.

Conversely, Chapados et al. teach routing the user input to one of a plurality of token interpreters (Temporary transitions 516, 518, and 520 from col. 10, lines 16-38, are created or enabled specifically for the purposes of understanding the current dialog turn (Col. 10, lines 55-57)).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the feature of routing the user input to one of a plurality of token interpreters as taught by Chapados et al. for Shaket's method because Chapados provides a method for automatically performing desired actions in response to spoken requests, wherein a natural dialogue speech application system uses a discourse management unit to partially or fully automate reservation applications, telephone directory assistance functions, allocation applications, among others (Col. 1, lines 5-14).

As per claim 9, Shaket, in view of Chapados et al, teach the system of claim 8, wherein said action interpreter further determines a token from the user input provided to said action interpreter (Shaket's paragraph [0123], wherein the Name and Quantity are token information).

Allowable Subject Matter

6. Claim 10 is allowed.

As per claim 10, there is no prior art reference, alone or in combination, that specifically teaches or suggests the limitation of "a main menu detector configured to

Art Unit: 2626

process context dependent data to distinguish user inputs specifying requested actions from user inputs specifying tokens for performing actions, wherein said main menu detector routes user inputs specifying actions to said action interpreter and user inputs specifying tokens to said action router, or a classifier configured to distinguish user inputs specifying context dependent data from user inputs specifying context independent data, wherein said classifier routes user inputs specifying context dependent data to said main menu detector and user inputs specifying context independent data to said action interpreter, and wherein said action interpreter forwards actions to said action router," as cited in the claim.

Prior art made of record, Chapados et al. (US Patent 6,356,869), teach a "discourse management unit that performs the understanding of an input request in the context of a certain conversation. For each input utterance by a user, a set of operations are performed by the discourse management unit to derive from the logical form input received from a natural language understanding (NLU) unit the response to be outputted back to the user. The discourse management unit makes use of an expectation handling unit and a conversation analyzer to provide the context dependent interpretation capability. The expectation handling unit maps the input data into data that is context dependent on the basis of dynamically generated remapping rules. The conversation analyzer receives the context-dependent data from the expectation handling unit and incorporates it into the state of the conversation. More precisely, the conversation analyzer keeps track of how the new context-dependent data should affect the system and the knowledge the system has of the user's goals" (Col. 2, lines 36-53).

The conversation analyzer is modeled using a finite-state machine (FSM) made up of a set of states, connected together by transitions (Col. 7, lines 65-67). Depending on the user's response to a given prompt, the focus can change from state to state following the direction set by transition rules 416, 418, wherein the transition rules may be context dependent state transition rules 416, which depend on the context of the conversation, or permanent transition rules 418 that are defined by a set of transitions dependent on the state but independent on the context of the conversation (Col. 8, lines 31-46). This reference differs from applicant's claimed invention in that even though the conversation analyzer distinguishes over context dependent or independent data (From Fig. 4, conversation analyzer 404 connected to context dependent state transition rules 416 and static state transition rules 418) it does not specifically route them to a main menu detector or action interpreter. Also this reference differs from applicant's claimed invention in that it does not have use for a main menu detector or action router as claimed.

Another prior art made of record, Shaket (US 2003/0061029), teaches a Task Manager that manages the Dialog by setting up the Goals (actions) into the Goals Module (action interpreter) and then expands the current new Goal into its dynamic Plan (token) and puts the plan as the current plan into the Plans Module (action router) (Paragraphs [0070]-[0072]), however Shaket differs from applicant's claimed invention in that it does not specifically mention the Task Manager (main menu detector) being configured to process context dependent data. Also Shaket does not teach a classifier configured to distinguish the user inputs specifying context dependent data from user

inputs specifying context independent data, wherein said classifier routes user inputs specifying context dependent data to said main menu detector and user inputs specifying context independent data to said action interpreter.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie Lennox whose telephone number is (571) 270-1649. The examiner can normally be reached on Monday to Friday 9:30 am - 7 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NL 10/15/2007


RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER